# Sustainable Programming

*finding the "Triple Bottom Line"*

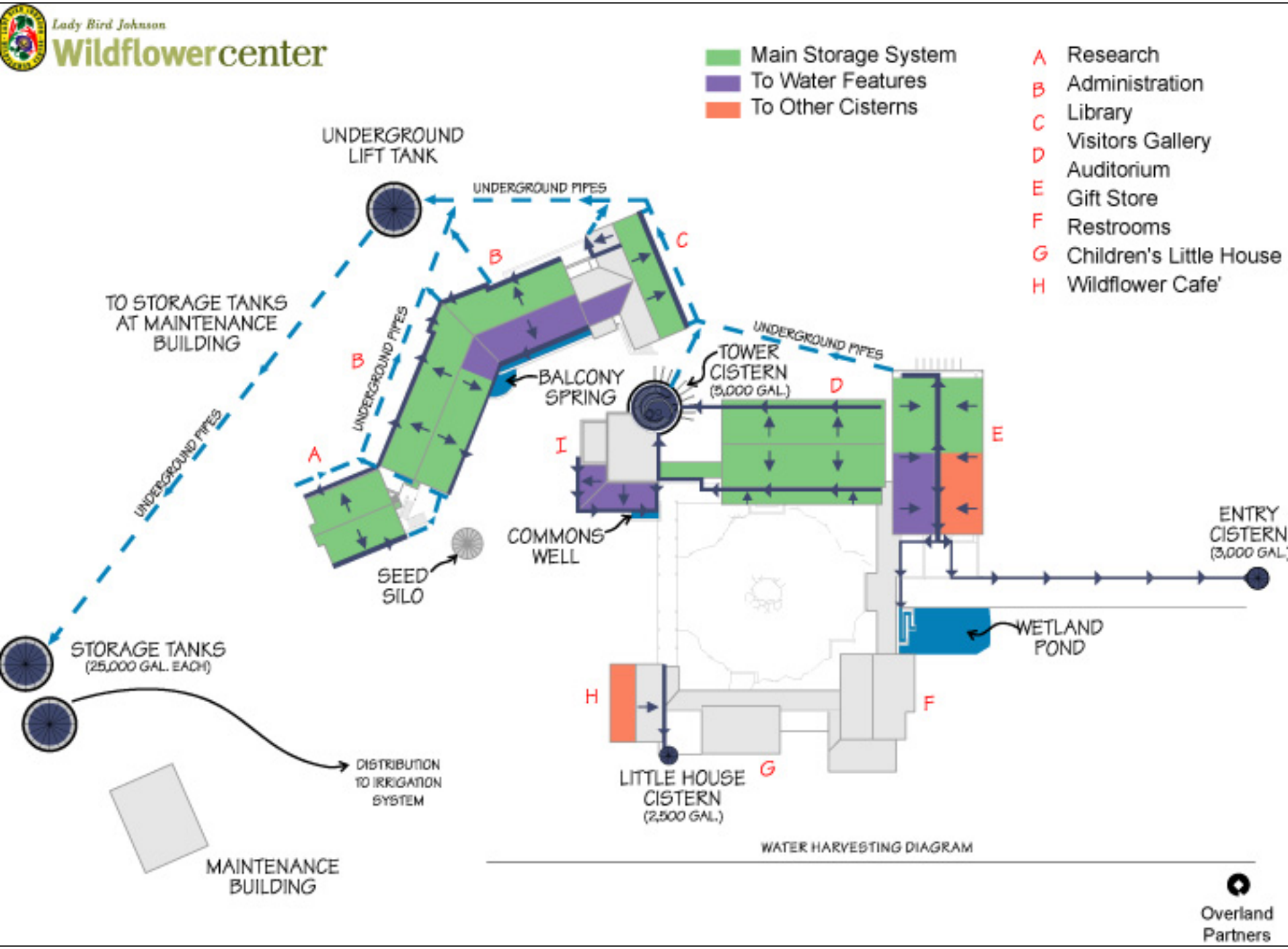
Lady Bird Johnson
Wildflower center
THE UNIVERSITY OF TEXAS AT AUSTIN

Lady Bird Johnson Wildflower center
THE UNIVERSITY OF TEXAS AT AUSTIN

increasing the sustainable use and conservation of native wildflowers, plants, and landscapes


THE VALUE OF
THIS TREE IS
$ 14,751.00

Lady Bird Johnson Wildflowercenter




WATER HARVESTING DIAGRAM

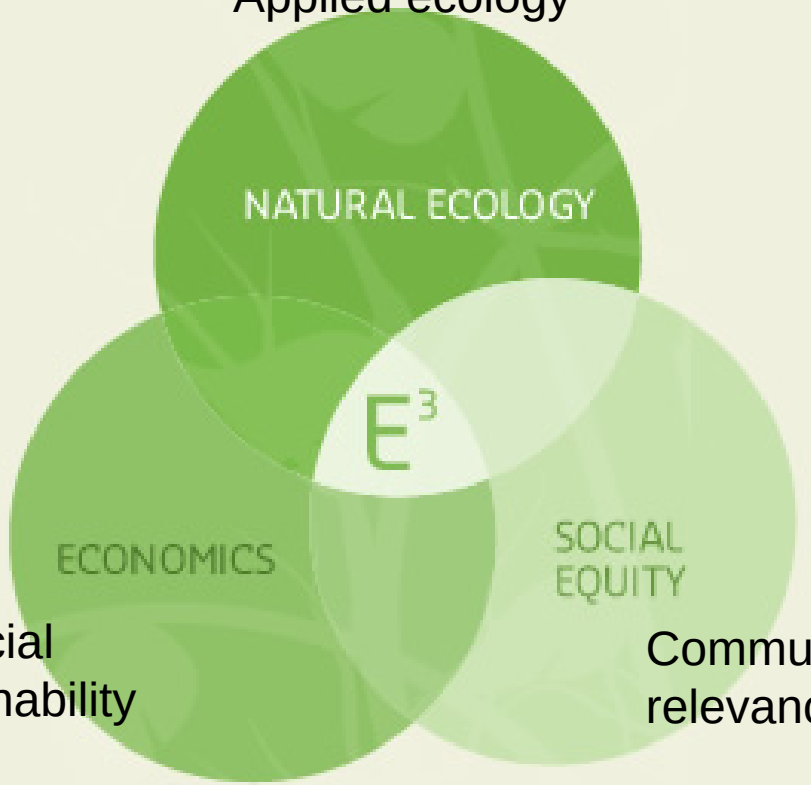
Overland Partners

# Creating a programmatic focus on restoration and sustainability

*Solving problems with native plants*

# Aiming at the Triple Bottom Line

Good science,
Applied ecology




Financial sustainability

Community relevance

*Policy Outreach*


*Education*

*Research*

*Consultation*

# *Policy Outreach*


ASLA

United States Botanic Garden

- Sustainable Sites
- Yardwise
- Roadside Management

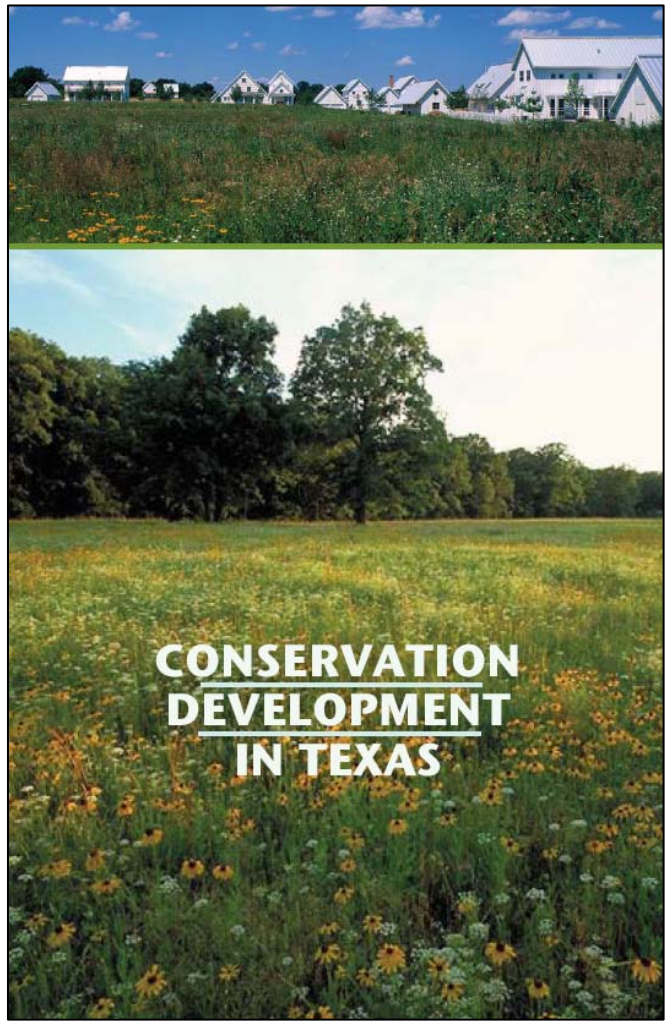
TCEQ

CTR Center for Transportation Research
The University of Texas at Austin
Research • Education • Public Service

Central Texas Regional Mobility Authority

# Education

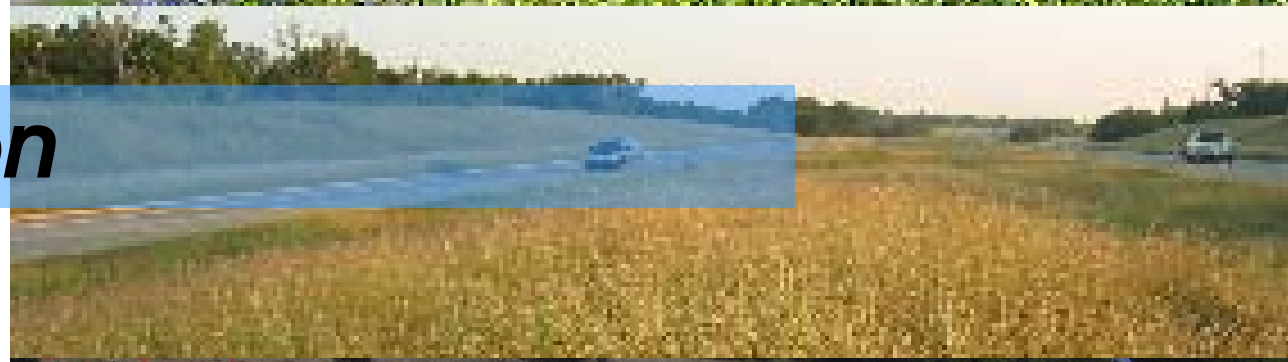
- Professional workshops & Publications
  - Conservation development
  - Ecological restoration design
  - Prescribed fire certification
- Collegiate courses
  - Restoration Ecology
  - Field Methods in Ecology
  - Native Plants



*Prairie/savanna restoration*

*Invasive species*

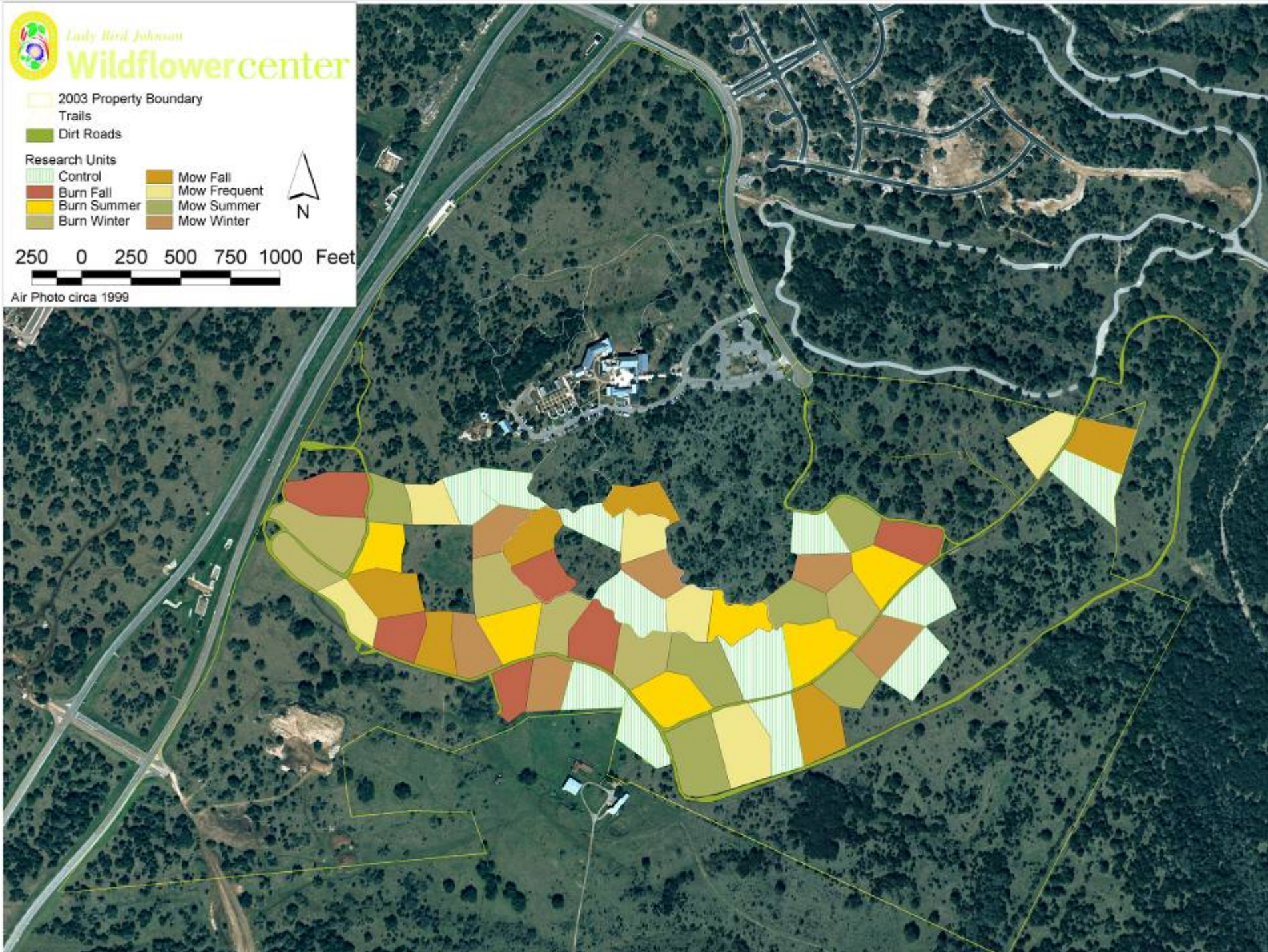
*Revegetation*

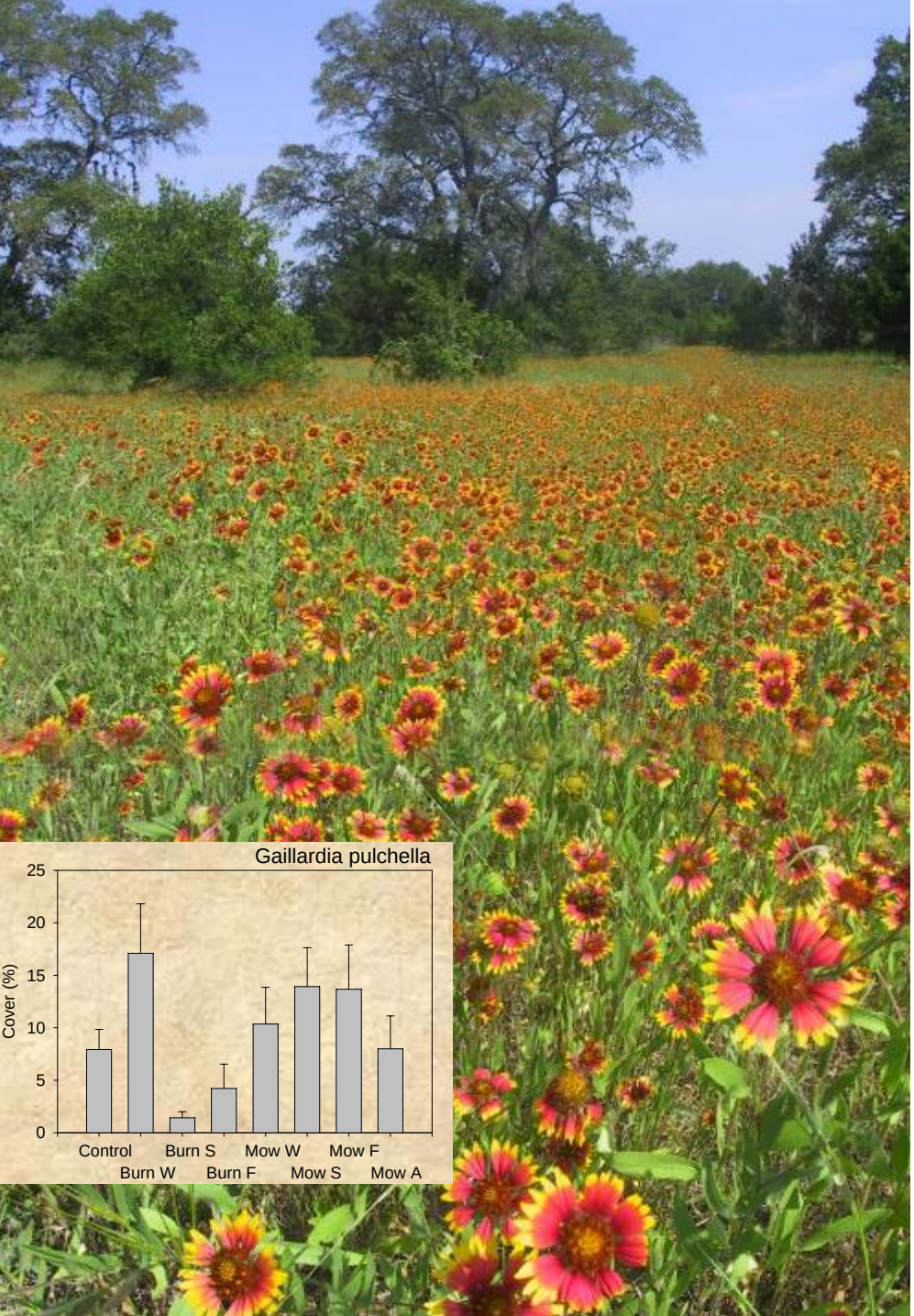


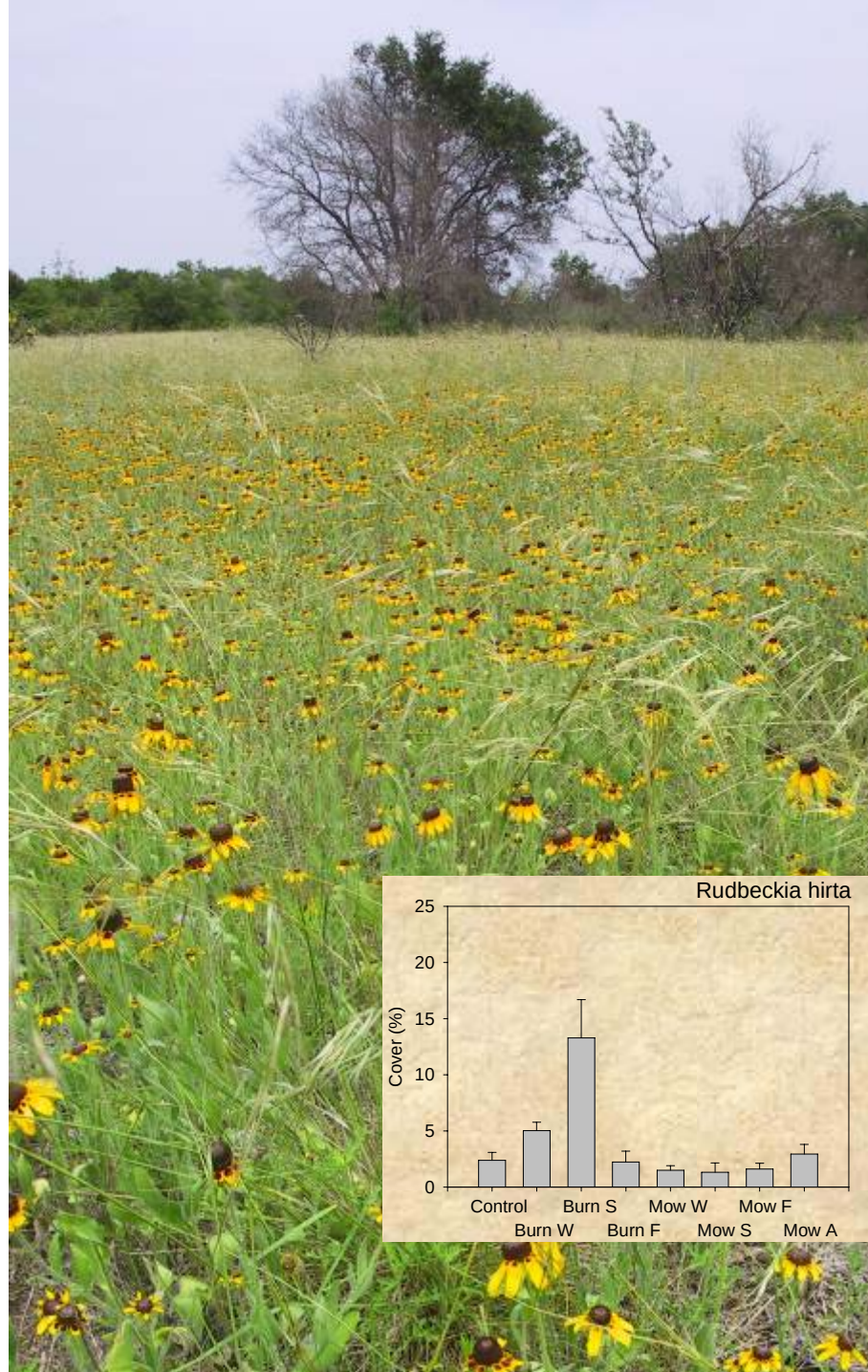
*Green roofs*

# *Prairie/savanna restoration*

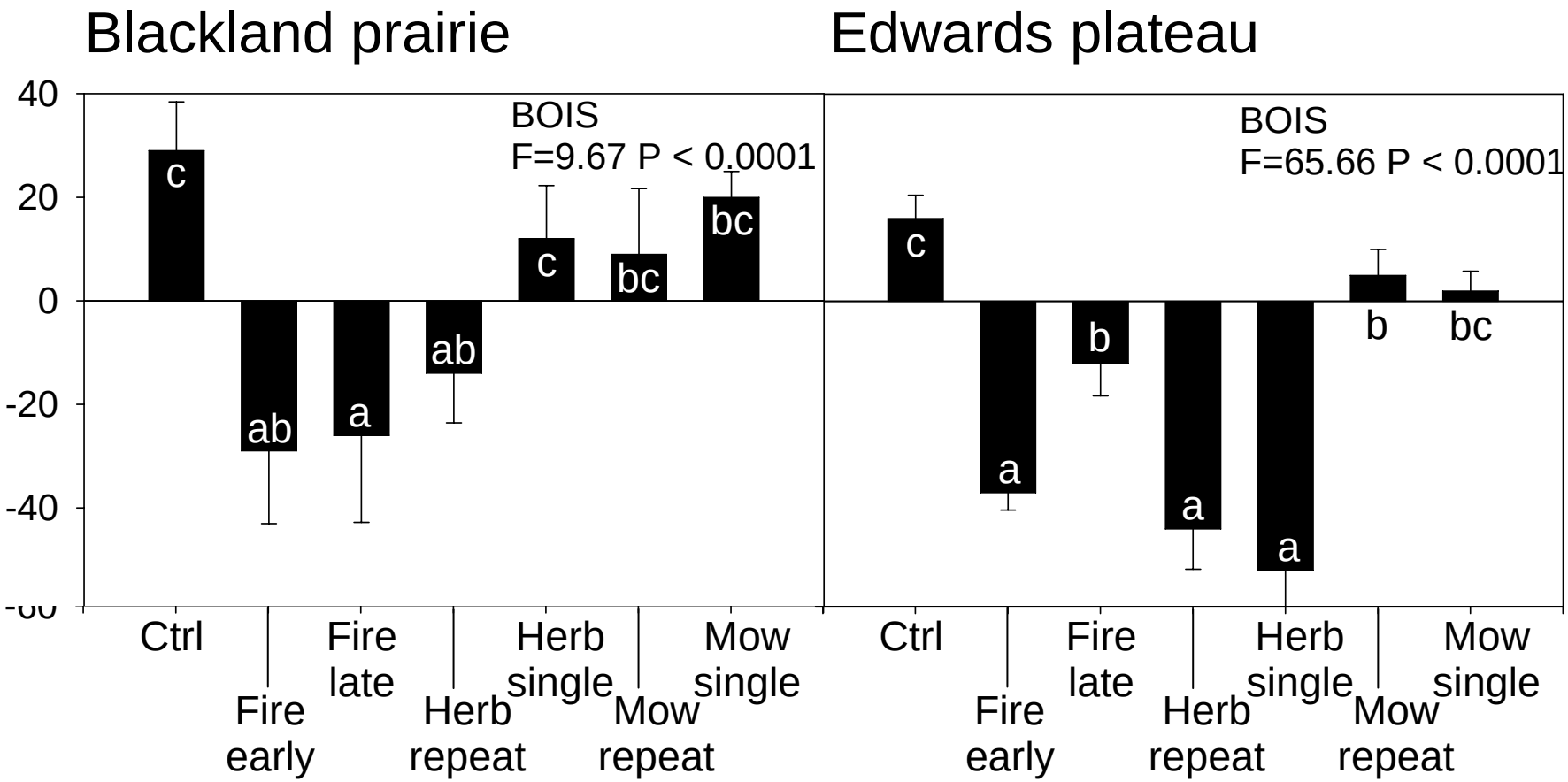
- *How can we use standard management techniques (fire, mowing, seeding) to manipulate degraded grasslands and savannas?*

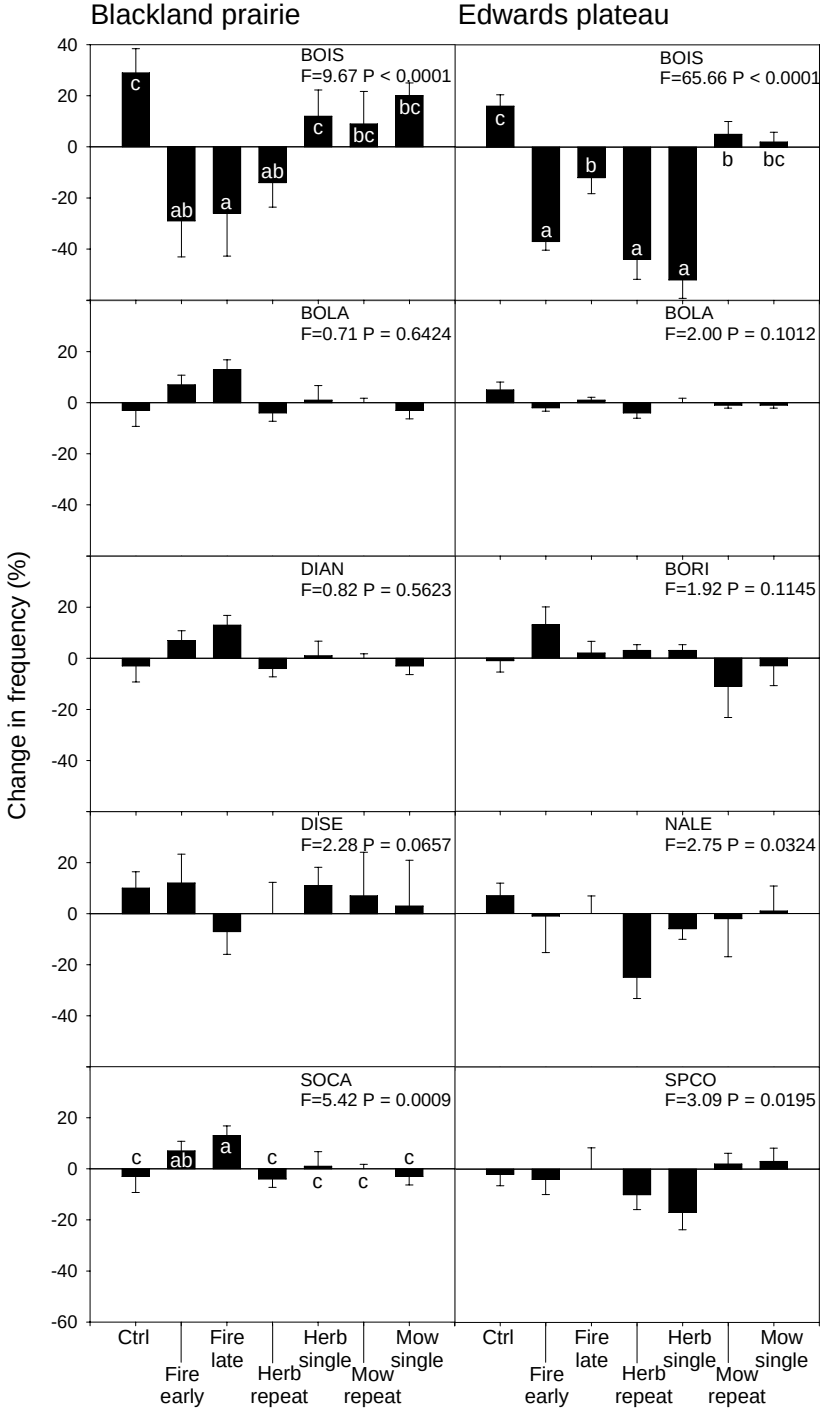

Lady Bird Johnson
Wildflowercenter
2003 Property Boundary
Trails
Dirt Roads
Research Units
Control
Burn Fall
Burn Summer
Burn Winter
Mow Fall
Mow Frequent
Mow Summer
Mow Winter
N
250 0 250 500 750 1000 Feet
Air Photo circa 1999


Gaillardia pulchella
Cover (%)
25
20
15
10
5
0
Control
Burn W
Burn S
Burn F
Mow W
Mow S
Mow F
Mow A

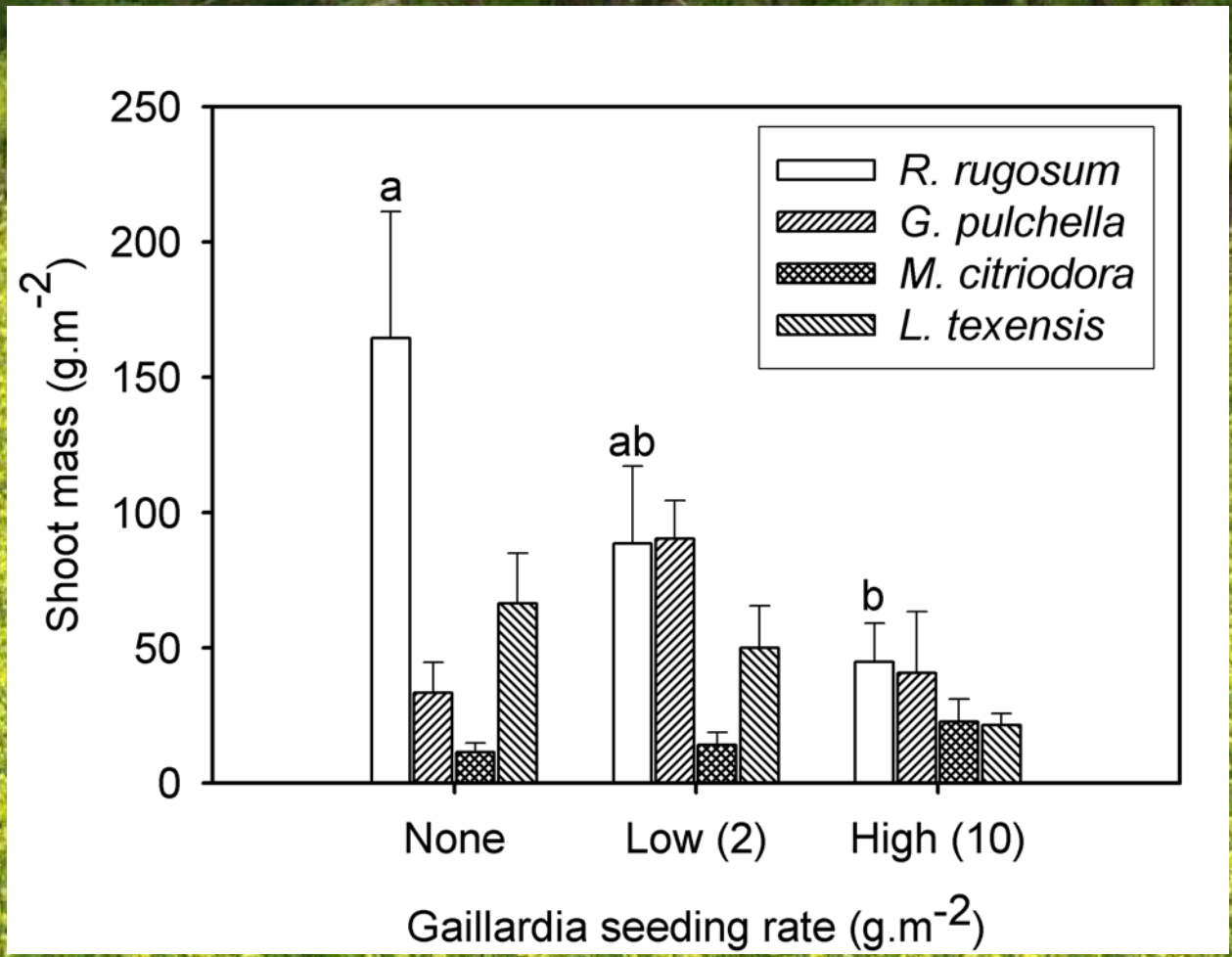

Rudbeckia hirta
Cover (%)
25
20
15
10
5
0
Control
Burn W
Burn S
Burn F
Mow W
Mow S
Mow F
Mow A

# *Invasive species*

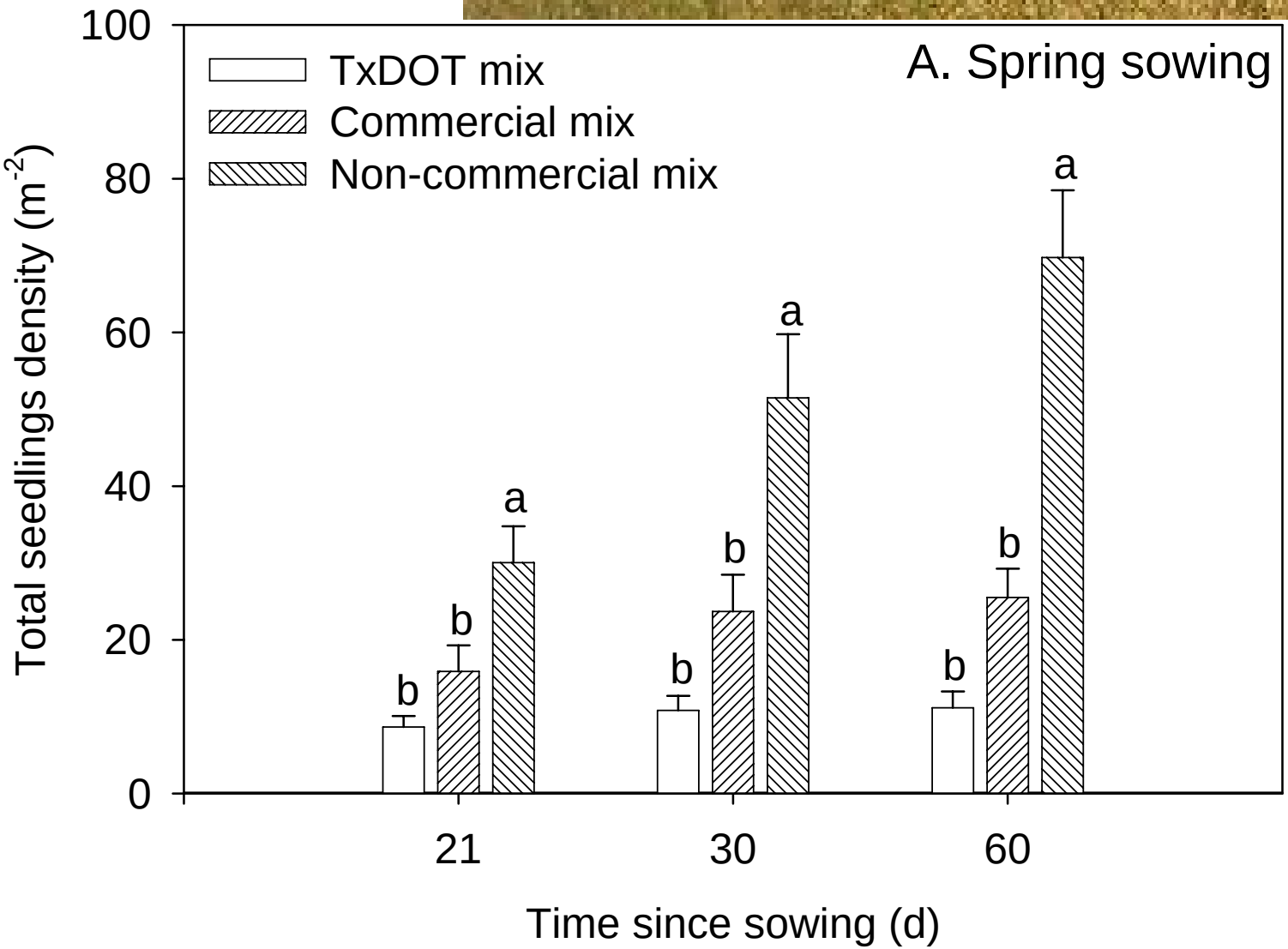



Blackland prairie
Edwards plateau
Change in frequency (%)
BOIS
F=9.67 P < 0.0001
BOIS
F=65.66 P < 0.0001
BOLA
F=0.71 P = 0.6424
BOLA
F=2.00 P = 0.1012
DIAN
F=0.82 P = 0.5623
BORI
F=1.92 P = 0.1145
DISE
F=2.28 P = 0.0657
NALE
F=2.75 P = 0.0324
SOCA
F=5.42 P = 0.0009
SPCO
F=3.09 P = 0.0195
Ctrl
Fire early
Fire late
Herb repeat
Herb single
Mow repeat
Mow single

# *Invasive species*



# Revegetation



# Green Roofs can...

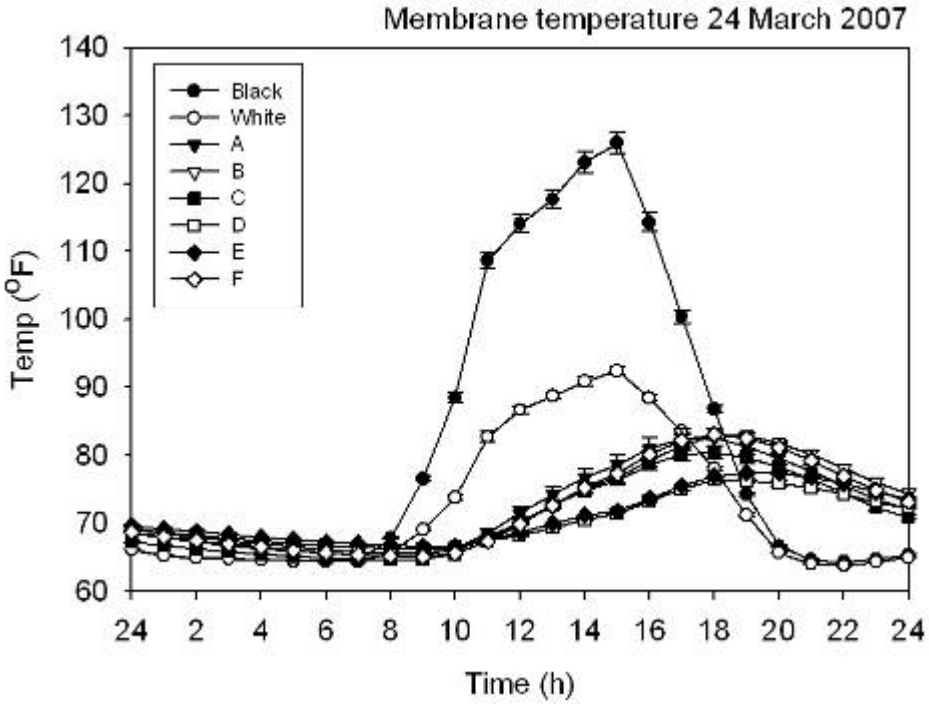
*Reduce cooling bills* The cooling and shading properties of a green roof can decrease the amount of heat flowing into a building

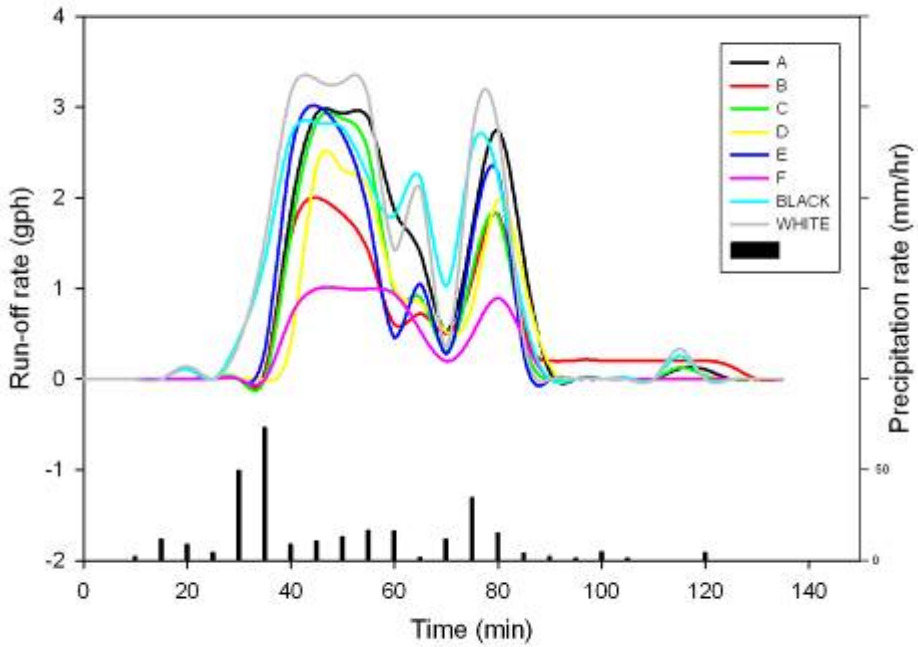
*Filter and retain storm water*
Vegetation and other layers within the green roof act as a filter and can improve the quality of the rainwater runoff.

*Cool the city* Green roofs can play an important role in cooling and shading urban areas. reducing the "heat island"effect.

For more information visit www.greenroofresearch.org or www.wildflower.org

# Green roofs


Membrane temperature 24 March 2007
Black
White
A
B
C
D
E
F
Temp (°F)
140
130
120
110
100
90
80
70
60
24
2
4
6
8
10
12
14
16
18
20
22
24
Time (h)


A
B
C
D
E
F
BLACK
WHITE
Run-off rate (gph)
4
3
2
1
0
-1
-2
Precipitation rate (mm/hr)
50
0
0
20
40
60
80
100
120
140
Time (min)

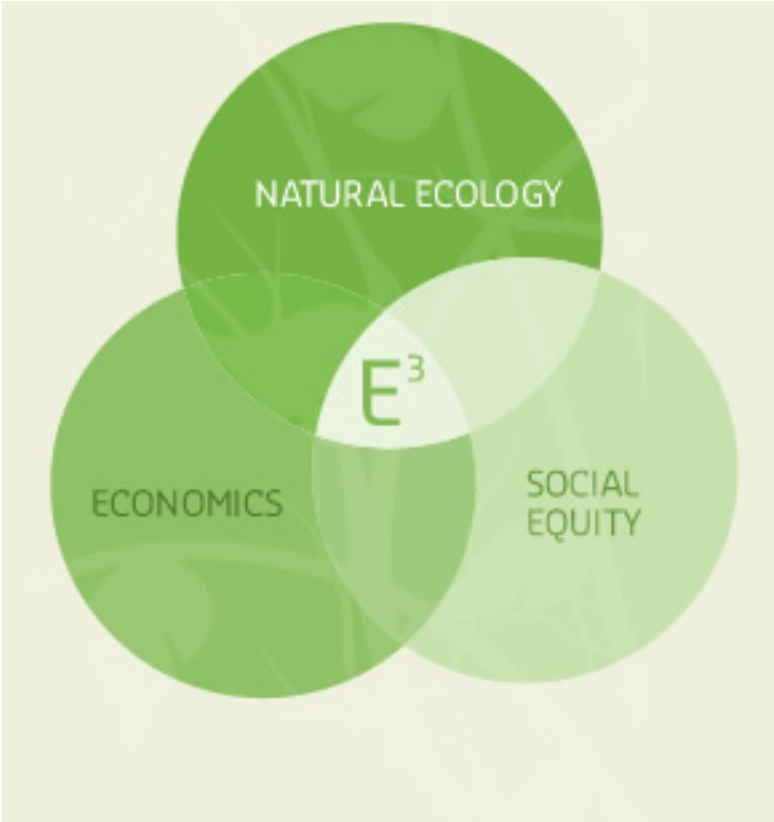
# Goin’ head to head with bermudagrass

Comparing:

- Aesthetics
- Weed resistance
- Water use
- & Traffic (phase 2)

- buffalograss (*Buchlöe dactyloides*)
- blue grama (*Bouteloua gracilis*)
- Texas grama (*Bouteloua rigidiseta*)
- curly mesquite (*Hilaria belangeri*)
- hairy grama (*Bouteloua hirsute*)
- hairy tridens (*Erioneuron pilosum*)
- poverty dropseed (*Sporobolus vaginiflorus*)

# Triple Bottom Line

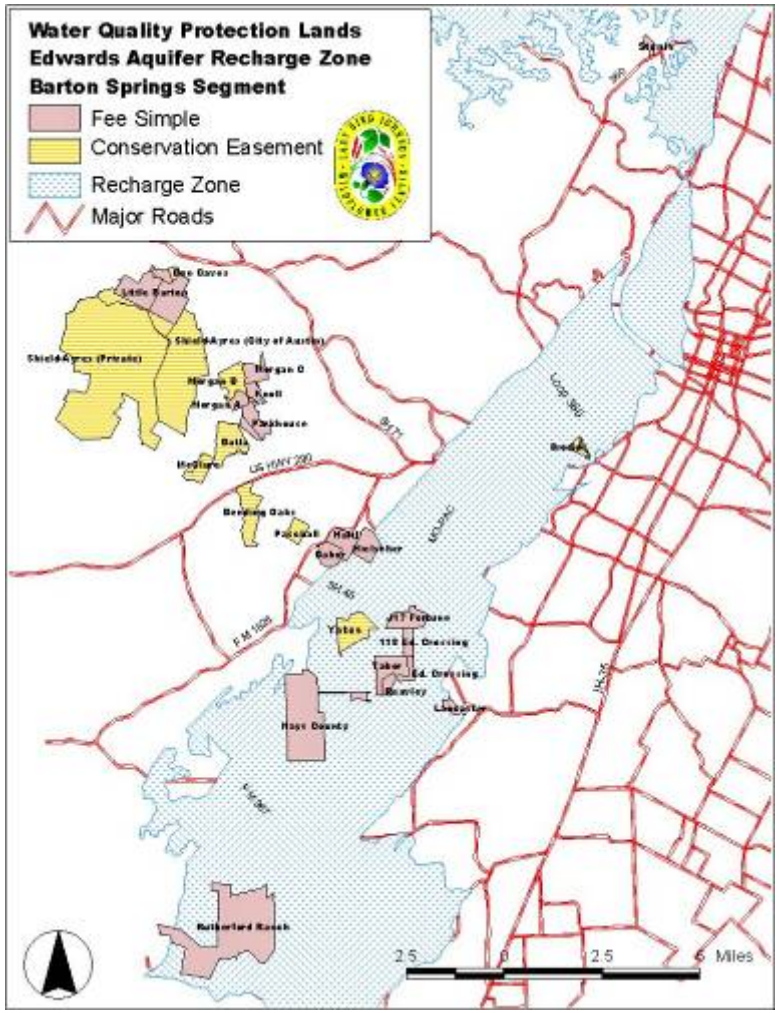



Taking our mission off site through fee based consulting

# Consultation

- Takes our mission “on the road”
- Applies what we have learned from research
- Raises new questions to investigate
- Raises our profile in the community

# Austin Water Quality Protection Lands




# Lost Creek Golf Course

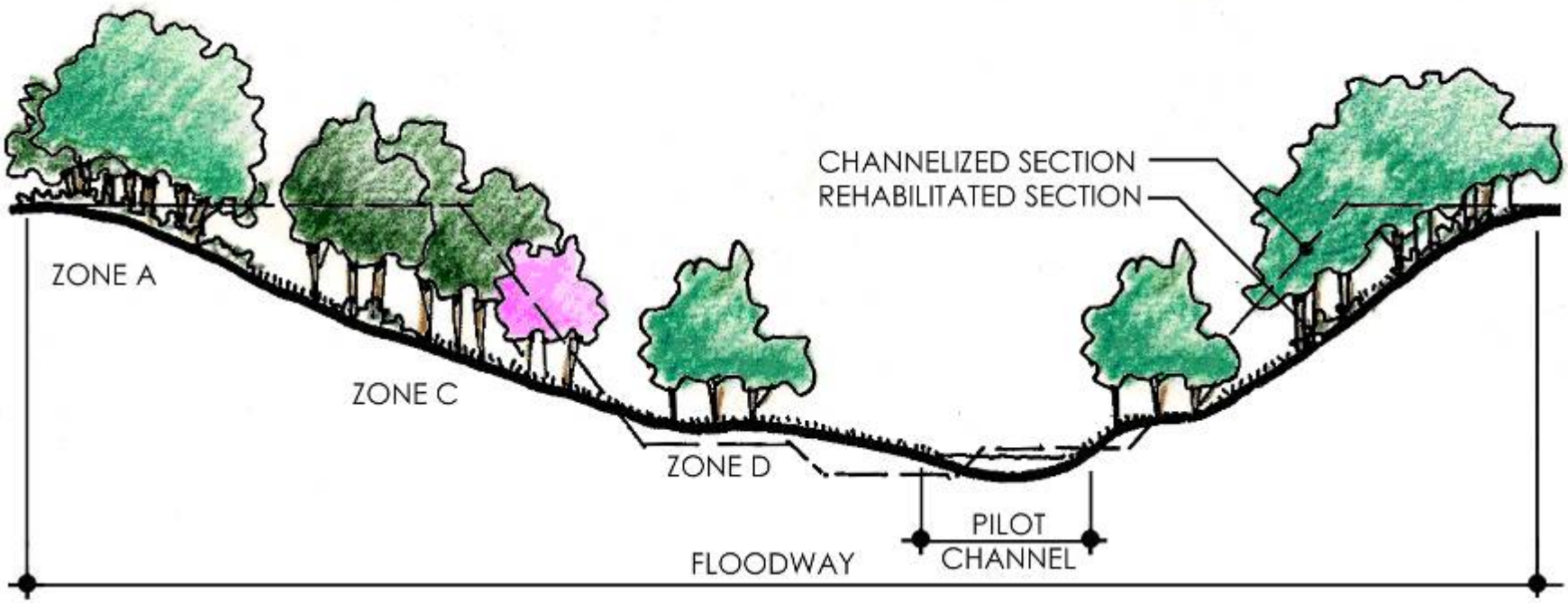



# Avery Ranch Wetland Restoration

Feb 2002

July 2003

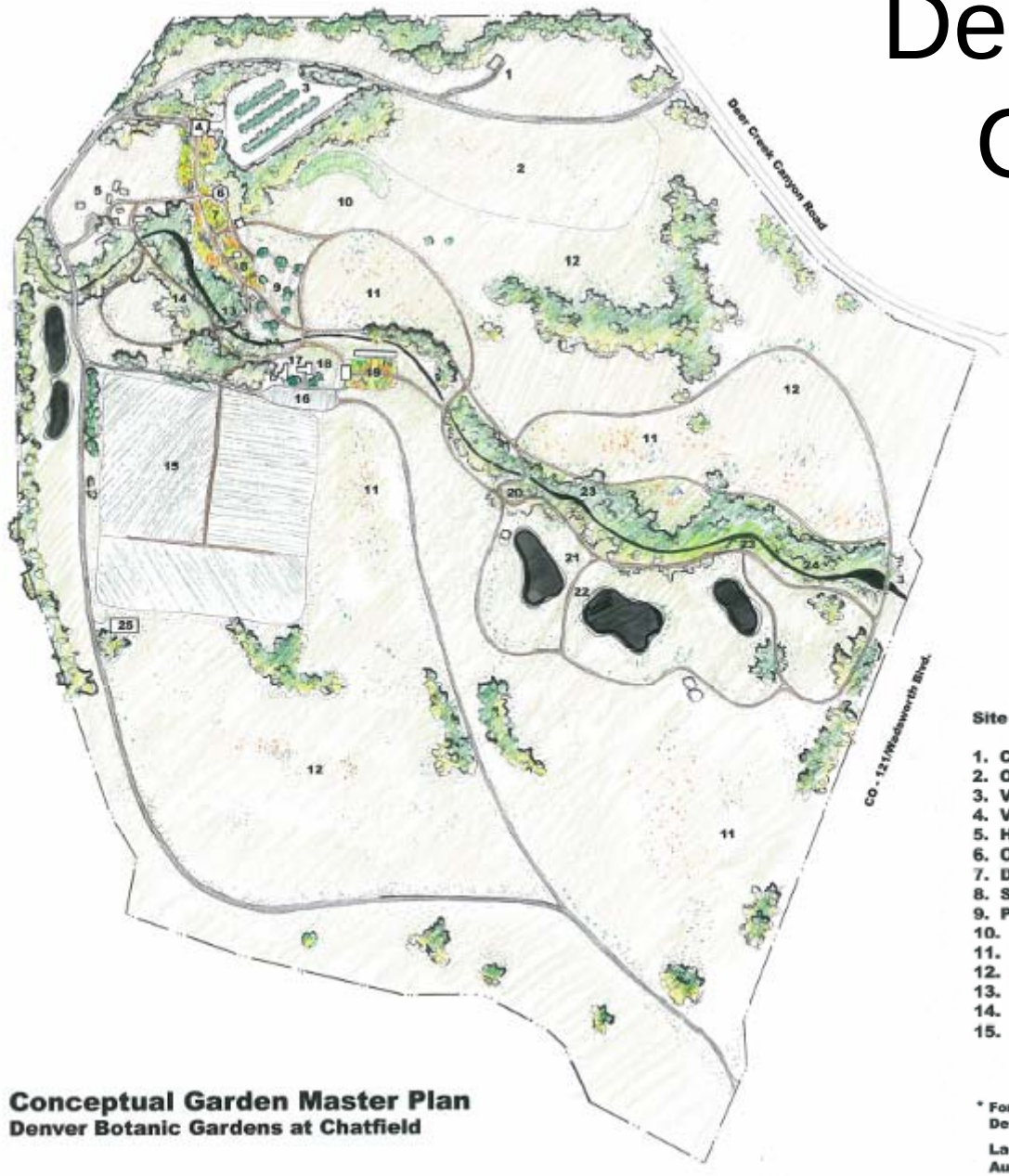
# San Antonio River




VEGETATION IS DIVIDED INTO ZONES WITH PREDEICTABLE INFLUENCES ON FLOOD WATER CONVEYANCE. VEGETATION AND FLOODWATER CAPACITY OF THE FLOODWAY ARE BALANCED TO PROVIDE WILDLIFE HABITAT, A DESIRABLE PLACE FOR PEOPLE, AND FLOOD PROTECTION.

## VEGETATION AND HYDRAULICS

# Denver Botanic Gardens at Chatfield




**Conceptual Garden Master Plan**
**Denver Botanic Gardens at Chatfield**

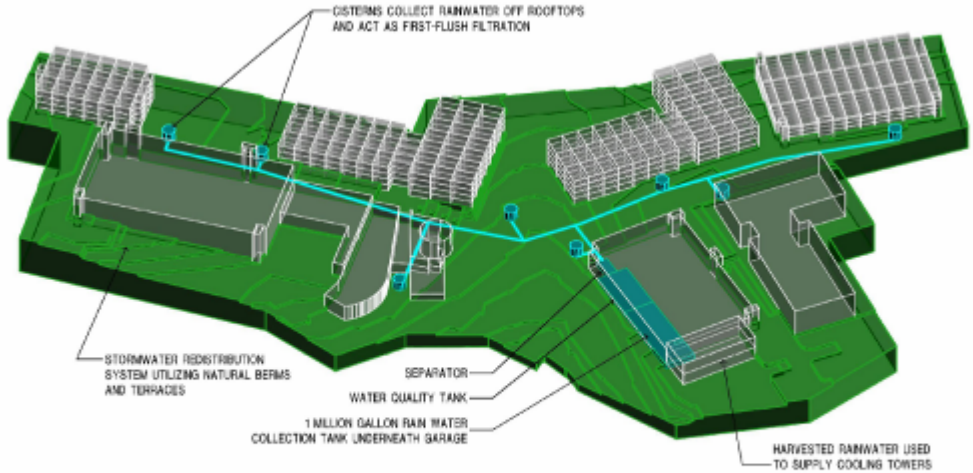
**Site Amenity Key**

1. Caretaker House
2. Overflow Parking
3. Visitor Parking
4. Visitor Center
5. Hildebrand Historical Ranch
6. Outdoor Rental Facility
7. Display Gardens
8. Schoolhouse
9. Picnic and Naturalistic Play Area
10. Outdoor Concert Venue
11. Native Wildflower Meadows
12. Ecological Restoration Research
13. Water Play Area
14. Tree House
15. Agricultural Demonstration Area
16. Staff Parking
17. Administration Building
18. Nature Center
19. Green Farm Barn and Gardens
20. Bird Blinds
21. Wetlands
22. Wet-lab
23. Outdoor Classroom
24. Riparian Corridor
25. Maintenance Facility

* For details on Site Amenities, see the booklet on the Denver Botanic Gardens at Chatfield - Conceptual Garden Master Plan

Lady Bird Johnson Wildflower Center
August 2006

# AMD

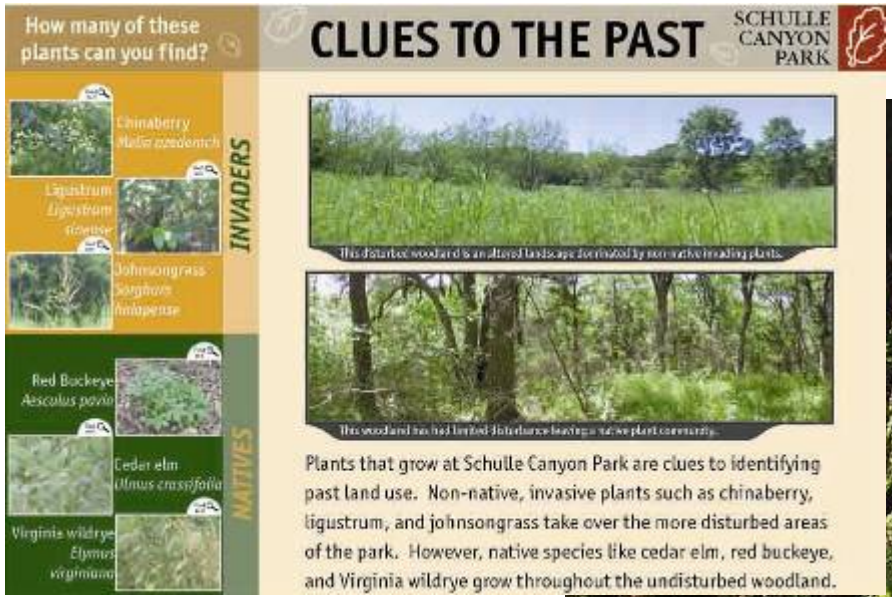




*"To my knowledge, this innovative system, as designed, will be the largest roof water collection system of its kind in the world."*

*-Hari J. Krishna, P.E.*
*Executive Vice President, International Rainwater Catchment Systems Association (IRCSA)*

# Stratus Green Roof

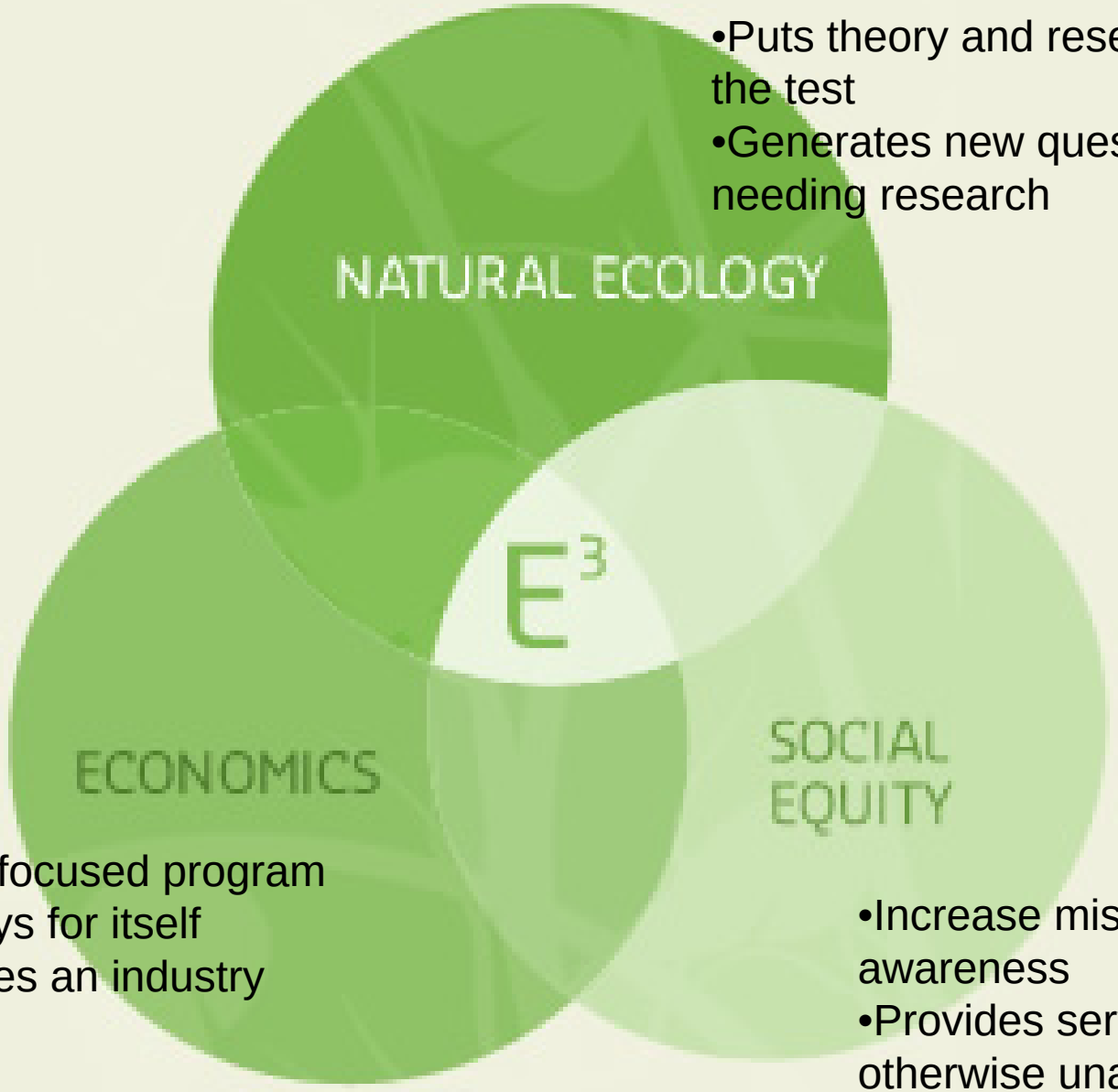
# Schulle Canyon Park




# Johnson Space Center (NASA)

# Starting a consulting program

- Focus on area of expertise
  - Tie to research
- Talk with consultants in a complementary area and gauge interest
- Don’t undersell your services




•Puts theory and research to the test
•Generates new questions needing research

•Mission-focused program which pays for itself
•Stimulates an industry over time

•Increase mission awareness
•Provides services otherwise unavailable